

Reach the Sky

Rocket Systems Design Activity

Situation

The Homer Rocket Company has determined that there is a market for an entire system designed to launch and recover model rockets. (Please note design of an entire system requires a different approach that will be discussed throughout this activity)



Design and construct a prototype packaged system consisting of a rocket, recovery system, launch pad, and ignition system.

Resources

Time	15 class periods
People	Entire Class
Energy	Electrical for ignition and chemical for the engine.
Information	Systems design and engineering, existing rockets, recovery, ignition, and launch devices
Money	None
Tools	X-acto knives, rulers, scissors, sandpaper, sanders, drill press, plastic bender, band saw
Materials	Balsa wood, stock body tubes, stock nose cones, empty paper towel rolls, glue, tape, model rocket engines, igniters, recovery wadding, paint, plastic, wire, batteries, any other material that fits NAR safety requirements
Space	The system must launch and recover the rocket within the space of the field in the rear of the school

Other Criteria

- The rocket must be able to use a standard size A, B, or C Estes engine.
- The entire system must employ safety features that adhere to NAR safety requirements.



Required Documentation

The following must be handed in at the end of the activity:

1. Design sketches, notes, and drawings from all group members.
2. Teamwork toward the goal of the project must be demonstrated

throughout the time of the project.